

CRANES WITH VIBRO HAMMER

ADVERTISEMENT

Effectively minimizing vibrations and shocks



Mobile cranes (both wheeled and crawler) with lattice or telescopic booms are designed to lift and move free-hanging loads. Mobile crane manufacturers and users have now recognized the risks of using mobile cranes in conjunction with free-hanging vibratory equipment for pile driving and extracting operations.

For this reason, the FEM (European materials handling federation) and the well-known manufacturers affiliated with it recommend the use of vibration dampers for such applications. Likewise, many crane rental companies are beginning to rent out vibration equipment only in conjunction with vibration dampers in order to prevent damage to the crane.

Highly effective vibration dampers for carrier equipment have been developed by the specialist for pile driving and extracting technology, TÜNKERS from Ratingen, Germany, and have been successful with them for many years.

The damper is ideally suited for use on mobile cranes in conjunction with freely suspended vibration equipment for pile driving and pulling work, but at the same time also for transporting sensitive loads and vibration-sensitive goods.

CONVINCING FUNCTION

The function of the vibration damper/shock absorber can be described as follows: The vibration-isolating function is performed by a horizontally arranged hollow rubber spring loaded in compression. As the tensile force increases, the angles decrease, causing the compression load

on the hollow rubber spring to decrease proportionally in tensile force. This makes it practically possible to introduce high tensile forces (large pre-tensioning forces for heavy drawing work) into the pile-driving and drawing equipment without overloading the hollow rubber spring. Simultaneously with the flexing of the hollow rubber spring, the geometrically arranged rope strands cause the lateral pressure plates to oscillate about the upper pivot points. This eliminates, even under maximum tensile load, the vertical vibration introduced by the pile-driving and pulling equipment and does not transfer it to the pulling rope of the carrier.

Tünkers vibration dampers are available in five designs and can therefore be used for almost all applications. The maximum permissible pretensioning force of the devices ranges from 120, 160, 250, 500 up to 800 kN.

Independent tests have shown that oscillations and vibrations are reduced by up to 93% by TÜNKERS vibration dampers. VMS Australia, a company specializing in vibration monitoring, carried out measurements for this purpose. VMS installed four different measuring points on the crane. Above the hook, at the tip of the boom, in the middle of the boom and in the cab. Different types of vibratory hammers were used to test the different forms of vibration. It was found that the TÜNKERS dampers absorb up to 75% of the shock load vibrations due to starting and stopping and up to 93% of the peak frequency vibrations during operation.

Thus, the TÜNKERS vibration dampers significantly reduce the general wear of the leading crane and likewise reduce the strain on the crane operator.

USE IN AUSTRALIA

TÜNKERS vibration dampers were recently able to record an extraordinary application in Australia. The company Mitchell Marine Constructions specializes in shipbuilding and realizes projects such as the construction of wharves, bridges and boat ramps. Pile driving is an important part of their work, and the use of vibratory hammers and hydraulic hammers are essential here. Mitchell Marine Constructions was involved in a project that used a vibratory hammer on an all-terrain hydraulic crane. „This is the first time we've used a vibratory hammer on an all-terrain hydraulic crane, and the end result was great. We installed four piles, two steel piles and two fiberglass piles, and there was minimal vibration,“ reports General Manager Chris Mitchell.



BENEFITS AT A GLANCE

In conclusion, the benefits of the vibration damper can be summarized as follows:

- The vibration damper reduces the high dynamic alternating forces generated by the pile driving and pulling equipment.
- This prevents damage to the telescopic crane used as the carrier.
- Efficient vibration isolation is achieved by combining a special, heat-resistant hollow rubber spring with a simple but effective joint design.
- Absolute safety even under heavy loads is guaranteed by a double-sided hanger and the self-centering, non-kinking hollow rubber spring.
- The applicability for pile driving and hauling is versatile.
- The vibration damper is also ideally suited for transporting vibration-sensitive goods.



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CONEXPO TRANSFORMED...

It is amazing the difference three years can make. Conexpo 2020 was due to be the largest for many years, but was hit by the rapid approach of Covid 19, leading to the event closing almost two days early.

This year Conexpo was back and bigger than ever, with the organisers claiming almost 140,000 visitors for the three co-located events - Conexpo, ConAg & IFPE - with 20 percent of them coming from overseas - an increase of 8,000 on the Covid affected 2020 event. This year was busy - particularly when the sun shone later in the week - and most importantly it had a very positive 'vibe' throughout. This translated into orders, according to exhibitors we spoke with, a great deal of money was spent at the show on equipment of all shapes and sizes.

SPREAD OUT ALL OVER

Unfortunately, this year's extended layout meant that getting from one area to another was even more protracted than last time, taking up to 30 to 40 minutes to go from the Festival Grounds - where most crane, access and telehandler exhibits were located - to the Silver Lot or Central Hall.

THE MISSING

As we have previously reported, several major manufacturers including Manitowoc, Genie, JLG, Bronto, Ruthmann and Wolffkran decided not to attend. Some due to its proximity to the postponed Bauma last October, and some due to increasing costs to exhibit and long lead times.

One surprise though was the appearance of two Grove cranes on the Broderson stand. Broderson

is part of Lanco, which also owns Manitowoc/Grove distributors Mi-Jack and Walter Peyton. It seems that a complaint was made, regarding a rule preventing non-represented manufacturers from exhibiting. As a result, Manitowoc popped up on the official exhibitors list just before opening day suggesting, perhaps, that a payment for the space had changed hands? Or was it just trade show gossip?

Thankfully for those on this side of the Atlantic the missing manufacturers will be at Vertikal Days next month.

The 'no shows' and the proximity of Bauma, did limit the number of big new product launches, however there was still plenty to see. With magazine space limited in this issue, we will try to convey a flavour of the show in pictures and cover new products in our features section over the remainder of the year.

STAND OUT EXHIBIT

To answer the question: 'What was the one exhibit that really stood out?' It can only be the maddest 30.5 metre/22 tonne Xtreme XR50100 quad track telehandler named 'Trackzilla' with tilt cab and an overall weight of 60 tonnes.

Conexpo will return to Las Vegas in March 2026. If you have never been to Conexpo or Las Vegas - you have to do it at least once...



Xtreme 'Trackzilla'



Liebherr 470 EC-B tower crane



Kobelco CK2000G3 - just part of the cowboy themed stand



Grove TMS 875-2 on the Broderson stand.



Broderson's new 20 ton RT-400



130 tonne Liebherr LRT 1130-2.1 with 60m main boom



Sunward SWTH1056 telehandler



Snorkel 2100SJ



Terex Commander digger derrick



Liebherr LR 1400 SX



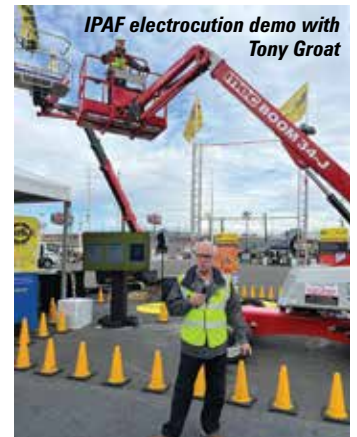
LGMG first mast boom in North America - the M2640JE



Imer stand



Hinowa was tucked away in the new West Hall



IPAF electrocution demo with Tony Groat



Xtreme tilt construction telehandler attachment



There was a lot of interest in the Snorkel and Xtreme products



Skyjack SJ1256 THS 17 metre telehandler is being produced at its new facility in Mexico



Jekko JF articulated tracked cranes



Link-Belt stand with the new 250 tonne 300AT All Terrain and the 110 tonne 120TT Truck Terrain crane



Merlo 50.35 S Plus EE4 CVTRONIC Roto telehandler



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PowerTower, Nano Push, Ecolift and Pecolift are now available to order with anti-climb vertical rails.



Platform Basket stand



Sinoboom scissors



The Jaso derrick crane



Sunward SWSL6094RT scissor



Merlo E-Worker 25.5-90 4WD



LGMG scissors including the new SR2669D



Hydro-Mobile stand



Tadano e-Pack



Palfinger PK 135.002 TEC 7 on a Mack truck



One of several really good bands keeping visitors entertained - these were on the Sany stand



Palfinger pick up mounted platform



Sany SCA1350A lattice crawler crane



Sinoboom celebrated 15 years at the show



Tadano GR-1300XL



The new Sogace Raptor brand includes three new models



TVH stand



Hetric stand



IMT stand



Liebherr LTM 1100-5.3 - 100 tonne 62m main boom



Tadano GR-1000XLL EVolt showing the inverter and motor



Xtreme Trackzilla



Zoomlion ZRT11D543



MEC Nano10-XD



Kobelco CK1600G-3



Ormig 55 sold to Baker Rigging



Versalift articulated boom on a Terramac RT9 U tracked chassis



Wacker Neuson TH412



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Panoramic 120.10

Don't settle for second best



 LIFT CAPACITY 12	 ENGINE 170	 LIFT HEIGHT 9.8
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This heavy duty model has been developed to offer greater lifting capacity while maintaining complete safety. The axles with epicyclic reducers are equipped with oil immersed brakes. The cab is on a higher position in order to ensure that the operator has better visibility. Visit merlo.co.uk to find out more.



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Maeda MC815C



Magni RTH 6.30



Sany telehandlers



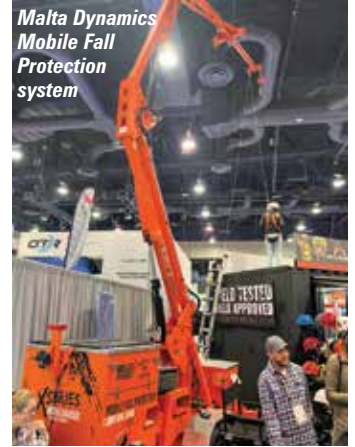
Cormach 240000A



Bailey Cranes scissor with protection



Almac T-Crane 1600 EVO



Malta Dynamics Mobile Fall Protection system



David White of Mec with the New MME 30-RJ mast boom



Goldhofer blade mover



Dingli stand



Bobcat TL519



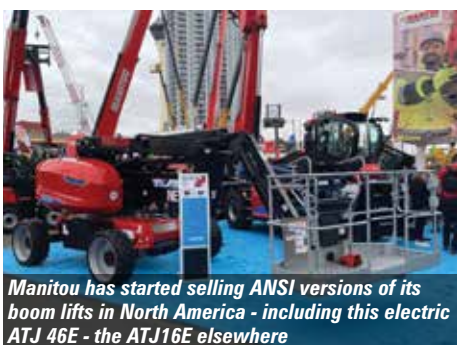
Manitex TC85159



Sany Rough Terrain cranes



Manitou MRT3570 roto telehandler



Manitou has started selling ANSI versions of its boom lifts in North America - including this electric ATJ 46E - the ATJ16E elsewhere



Manitex AL68 tracked mounted lift



Pettibone Extendo 1544X